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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARCOS NOGUEIRA NOVAES

Appeal 2008-004794
Application 09/893,789
Technology Center 2100

Decided: February 23, 2010

Before ALLEN R. MACDONALD, *Vice Chief Administrative Patent Judge*,
JOHN A. JEFFERY, and ST. JOHN COURTENAY III, *Administrative
Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) (2002) from the Examiner's rejection of claims 2-17, 22, 24-39, 44, 45, and 47-51. We have jurisdiction under 35 U.S.C. § 6(b) (2008). Claims 1, 18-21, 23, 40-43, 46, and 52-55 have been cancelled. App. Br. 2.

We affirm-in-part and enter new grounds of rejection under 37 C.F.R. § 41.50(b).

STATEMENT OF THE CASE

Appellant invented a computer-implemented method, a computer system, and a computer readable medium for indexing data blocks according to a word collection. Data blocks are mapped within an N-dimensional coordinate space, and N equals the number of elements in the subject words' collection. The method generates a proximity list indicating documents adjacent in the coordinate space to a search criteria's current location. Data blocks that are relative close in space are found to have an affinity to each other. *See generally* Abst. and Spec. 9-12 and 15-17.

Claim 2 is illustrative:

2. A computer-implemented method of indexing data blocks according to a collection of subject words of the data blocks, comprising:

constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words of the data blocks; and

traversing data block links leading to discovery of cross-subject affinities.

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The Examiner relies on the following as evidence of unpatentability:

Egger	6,233,571 B1	May 15, 2001
Fox	2003/0130998 A1	July 10, 2003 (effectively filed Nov. 18, 1998)
Egendorf	2003/0177111 A1	Sept. 18, 2003 (effectively filed Nov. 16, 1999)

THE REJECTIONS

1. The Examiner rejected claims 2-17, 22, 24-39, 44, 45, and 47-51 under 35 U.S.C. § 101. Ans. 4.¹
2. The Examiner rejected claim 17 under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. Ans. 5.
3. The Examiner rejected claims 2-10, 22, 24-32, 44, 45, and 47-51 under 35 U.S.C. § 103(a) as unpatentable over Fox and Egendorf. Ans. 5-13.
4. The Examiner rejected claims 11-17 and 33-39 under 35 U.S.C. § 103(a) as unpatentable over Fox, Egendorf, and Egger. Ans. 13-15.

We address each ground of rejection separately.

¹ Throughout this opinion, we refer to: (1) the Appeal Brief filed July 9, 2007; (2) the Examiner's Answer mailed September 18, 2007 and supplemented November 23, 2007 (indicating the Examiner's Answer mailed November 14, 2007 has been vacated); and (3) the Reply Brief filed January 10, 2008.

I. THE NON-STATUTORY SUBJECT MATTER REJECTION

CLAIM GROUPINGS

As for the § 101 rejection, Appellant argues the following claim groupings separately: (1) claims 2-17, 22, 48, and 49; (2) claims 24-39, 44, 50, and 51; and (3) claims 45 and 47. *See* App. Br. 7-8. Accordingly, we select claims 2, 24, and 45 as representative of each group, respectively. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Regarding representative claim 2, the Examiner finds that the claim is directed to an abstract idea and does not produce a tangible result due to performing solely a mathematical process. Ans. 4. Citing to *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999), Appellant argues that these claims are directed a method that is useful, concrete, and tangible. App. Br. 7-8. Appellant also states the method is not pre-empting a mathematical algorithm. Reply Br. 2-3 (referring to *Gottschalk v. Benson*, 409 U.S. 63 (1972)).

Regarding representative claim 24, the Examiner also finds that the claim is directed to an abstract idea and does not produce a tangible result due to performing solely a mathematical process. Ans. 4. Appellant argues that these claims are directed a machine that is statutory subject matter. App. Br. 7.

Regarding representative claim 45, the Examiner finds that the claims are a signal-bearing media that include a transmission media, such as digital, analog, communication, and wireless links. Ans. 4. Appellant argues that these claims are directed to a computer-readable media that is statutory subject matter based on *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995).

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App. Br. 7. Appellant also argues that the claim is directed to tangible computer-readable media and not a transmission media or energy. Reply Br. 2-3.

The issues before us, then, are as follows:

ISSUES

- (1) Has the Examiner erred in finding the following claims recite non-statutory subject matter under § 101:
- (a) the method recited in claim 2;
 - (b) the system recited in claim 24; and
 - (c) the computer-readable medium recited in claim 45?

A. *Claims 2-17, 22, 48, and 49*

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence:

1. Claim 2 recites “[a] computer-implemented method of indexing data blocks according to a collection of subject words of the data blocks.”
Claim 2, ll. 1-2.
2. Claim 2 recites two steps: (a) constructing a N-dimensional coordinate space, where N is a cardinality of the collection of data blocks’ subject words and (b) traversing data block links leading to the discovery of cross-subject affinities. Claim 2, ll. 3-5.

Appellant's Disclosure

3. The Specification states that “the invention includes a computer-implemented method for performing the above method . . . Such a method may be implemented, for example, by operating a computer, as embodied by a digital data processing apparatus, to execute a sequence of machine-readable instructions.” Spec. 42:3-9.

4. The Specification states that data blocks include “Web pages, pictures and so forth.” Spec. 15:14-15. The Specification explains that “data blocks may contain data and metadata, as well as links to other data blocks” (Spec. 20:24-21:1), and that “data blocks are organized according to spatial function derived from the metadata (and hyperlink information) which is contained within each block.” Spec. 10:1-3.

PRINCIPLES OF LAW

Section 101 of the Title 35 of the United States Code states:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. § 101 (2002).

“[A]n applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article” into a different state or thing. *In re Bilski*, 545 F.3d 943, 961 (Fed. Cir. 2008) (en banc), *cert. granted*, 77 U.S.L.W. 3442, 3653, 3656 (U.S. Jun. 1, 2009) (No. 08-964) 61; *see also Benson*, 409 U.S. at 70.

“[A] machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” *In re Ferguson*, 558 F.3d 1359, 1364 (Fed. Cir. 2009) (quoting *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007) (internal quotation marks omitted)). An article is “a particular substance or commodity. . . .” *Nuijten*, 500 F.3d at 1356 (citation omitted).

ANALYSIS

Based on the record before us, we find no error in the Examiner’s non-statutory subject matter rejection of representative independent claim 2. A process claim satisfies § 101 if it: (1) is tied to a particular machine, or (2) transforms an article into a different state or thing. *Bilski*, 545 F.3d at 961. Claim 2 recites a “[a] computer-implemented method” (FF 1), which ties this method to a computer. The Specification also describes the method can be implemented by a computer or digital data processing apparatus. FF 3. However, the remaining limitations of claim 2 are not tied to any machine – let alone a particular machine. *See* FF 2. At best, claim 2 ties the process to a general purpose machine or computer, not a particular machine that satisfies § 101. *See Bilski*, 545 F.3d at 961.

Nor does Claim 2 transform an article into a different state or thing. Claim 2 recites the steps of constructing an N-dimensional coordinate space and traversing data block links. FF 2. The construction of the coordinate space does not involve transforming an article into a different state or thing. Rather, this step involves creating—not transforming—a space, and the

coordinate space is not a substance or commodity. *See Bilski*, 545 F.3d at 961; *see also Nijten*, 500 F.3d at 1356.

Claim 2 also recites traversing data block links. FF 2. However, there is no transformation of these data block links (FF 4) into a different state or thing. Thus, even assuming, without deciding, that the recited data blocks links are an “article” for purpose of the *Bilski* analysis, the traversing step does not satisfy the transformation prong of the *Bilski* analysis to determine a patent-eligible method under §101. We therefore find claim 2 broadly recites a non-transformative process.

Moreover, the claimed method is not both (a) limited to a practical application of a fundamental principle to transform specific data, and (b) limited to a visual depiction that represents specific physical objects or substances. *See Bilski*, 545 F.3d at 962-63 (discussing the transformation of *In re Abele*, 684 F.2d 902 (CCPA 1982)).

Lastly, we are unpersuaded by Appellant’s argument regarding *State Street* and *AT&T* and the claimed process being useful, concrete, and tangible. App. Br. 7. The “useful, concrete, and tangible result” test pronounced in *State Street* is no longer adequate. *Ferguson*, 558 F.3d at 1364 n. 3 (quoting *Bilski*, 545 F.3d at 959-60) (“[T]he ‘useful, concrete and tangible result test’ is insufficient to determine whether a claim is patent-eligible under § 101’ . . . and ‘is inadequate.’”)

For the foregoing reasons, claim 2 is not a patent eligible “process” under § 101. Accordingly, we sustain the rejection of representative independent method claim 2 under § 101, and claims 3-17, 22, 48, and 49 which fall with claim 2.

B. Claim 24-39, 44, 50, and 51

For the reasons discussed below, we will not reach the merits of the rejection of claims 24-39, 44, 50, and 51 under 35 U.S.C. § 101. Rather, we reverse this rejection as a matter of form and enter a new ground of rejection *infra*.

C. Claims 45 and 47

ADDITIONAL FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

Appellant's Disclosure

5. The Specification discusses executing

a sequence of machine-readable instructions. These instructions may reside in various types of signal-bearing media. Thus, this aspect of the present invention is directed to a programmed product, comprising signal-bearing media tangibly embodying a program of machine-readable instructions executable by a digital data processor incorporating the CPU 1111 and hardware above, to perform the method of the invention.

Spec. 42:8-15.

6. The Specification states

[w]hether contained in a diskette 1200, the computer/CPU 1111, or elsewhere, the instructions may be stored on a variety of machine-readable data storage media, such as DASD storage (e.g., a conventional “hard drive” or a RAID array), magnetic tape, electronic read-only memory (e.g., ROM, EPROM, or EEPROM), an optical storage device (e.g., CD-ROM, WORM, DVD, digital optical tape, etc.), paper “punch” cards, or other suitable signal-bearing media including transmission media

such as digital and analog and communication links and wireless.

Spec. 42:21-43:4.

PRINCIPLES OF LAW

Signals are not patentable subject matter under § 101. *Nuijten*, 500 F.3d at 1357.

During examination of a patent application, a claim is given its broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted).

ANALYSIS

Representative independent claim 45 recites, in pertinent part, a “computer-readable medium tangibly embodying a program of recordable, machine-readable instructions.” Appellant argues that this claim excludes transmission signals because of the phrase “tangibly embodying.” Reply Br. 2-3. We disagree with this interpretation of claim 45 when read in light of the Specification. *See Am. Acad. of Sci. Tech*, 367 F.3d at 1364.

The Specification discloses signal-bearing media can tangibly embody a program. FF 5. The Specification also explains that the machine-readable storage media can be “other suitable signal-bearing media including transmission media such as digital and analog and communication links and wireless.” FF 6. Based on this disclosure, machine-readable or computer-readable media includes transitory signal-bearing media, such as wireless communication links. As such, when reading independent claim 45 in light

of the Specification, the recited “computer-readable medium tangibly embodying a program of recordable, machine-readable instructions” encompasses *wireless transmission media or signals* to perform the recited operations. *See Ex parte Morris*, No. 2008-5581, slip op. at 11-12 (BPAI Feb. 13, 2009), available at <http://des.uspto.gov/Foia/ReterivePdf?system=BPAI&flNm=fd20085581-02-13-2009-1> (finding the computer program product tangibly embodied in a computer-readable medium encompasses a signal when read in light of the Specification).

Such signals are not patentable subject matter under § 101. *See Nuijten*, 500 F.3d at 1357. Therefore, independent claim 45 includes both statutory subject matter (instructions stored on a non-transitory medium) and non-statutory subject matter (instructions conveyed by a transitory medium). According to USPTO guidelines, however, such claims must be amended to recite solely statutory subject matter.²

Additionally, we are unpersuaded that these claims are statutory under *Beauregard*. The court in *Beauregard* did not decide whether the computer-readable claim was patent-eligible under § 101. Rather, the court merely indicated that the Commissioner agreed the printed matter doctrine was not applicable and, therefore, no case or controversy existed. *Beauregard*, 53 F.3d at 1584.

For the foregoing reasons, independent claim 45 does not recite statutory subject matter under 35 U.S.C. § 101. Accordingly we sustain the

² *See MPEP*, Rev. 7, Jul. 2008 (“MPEP”) § 2106(IV)(C)(2)(2)(a) (“[A] claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application.”)

rejection of representative independent claim 45 under § 101, and claim 47 which falls with claim 45.

II. THE ENABLEMENT REJECTION

Claim 17 recites that the data blocks “are selectively traversable by using hypertext links and by not using hypertext links.” The Examiner finds that this claim contains subject matter that one skilled in the art would not know how to make and use – namely traverse the data blocks simultaneously using hypertext and not using hypertext links. Ans. 5.

Appellant argues that claim 17 does not recite traversing using hypertext links and not using hypertext links simultaneously or at the same time. App. Br. 8-9. Rather, Appellant argues, the claim recites that the data blocks are selectively traversable in either fashion. *Id.* Moreover, Appellant contends an ordinarily skilled artisan would know how to make and use the invention of claim 17 without undue experimentation. *Id.* at 9.

ADDITIONAL FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

Appellant’s Disclosure

7. The Specification states that data can be navigated by traversal of HTML links or navigate documents in the World Wide Web without relying on the traversal of Web links. Spec. 11:4-8.

PRINCIPLES OF LAW

“[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’” *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993) (citations omitted).

ANALYSIS

Based on the record before us, we find error in the Examiner’s enablement rejection of claim 17. Claim 17 includes data blocks that are selectively traversable (a) by using hypertext links, and (b) by not using hypertext links. We agree with Appellant (App. Br. 8) that there is no limitation in claim 17 that the “selectively traversable” step of using hypertext links and not using hypertext links occurs simultaneously. Rather, based on the broadest reasonable construction in light of the Specification (FF 7), the claim recites alternative options for the “selectively traversable” step, and merely covers both scenarios. *See Am. Acad. of Sci. Tech*, 367 F.3d at 1364.

The Examiner has not asserted, nor do we find, that either option (i.e., using hypertext links or not using hypertext links) is non-enabled. We find therefore that one skilled in art could make and use the invention of claim 17 without undue experimentation.

III. NEW GROUND OF REJECTION UNDER 37 C.F.R. § 41.50(B)

Under 37 C.F.R. § 41.50(b), we enter a new ground of rejection for claims 24-39, 44, 50, and 51 under 35 U.S.C. § 112, second paragraph, on

the same basis as set forth in *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328 (Fed. Cir. 2008).

We also enter an alternative new ground of rejection for system claims 24, 28, 34, 50, and 51 under 35 U.S.C. § 112, first paragraph, on essentially the same basis as *Ex parte Rodriguez*, 92 USPQ2d 1395 (BPAI 2009) (precedential) and *Ex parte Miyazaki*, 89 USPQ2d 1207 (BPAI 2008) (precedential).

We address the claims as follows: (1) claims 24, 28, 34, 50, and 51; (2) claim 44; and (3) claims 25-27, 29-33, and 35-39.

ADDITIONAL FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

Appellant's Disclosure

8. Appellant's original disclosure uses the phrase "construction unit" in claims 23 and 29. Spec. 48-49.

9. Appellant's Summary of Claimed Subject Matter in the Appeal Brief matches the construction unit for constructing a N-dimensional coordinate space and traversing data block links leading to the discovery of cross-subject affinities to the following passages from the Appellant's disclosure: (1) page fifteen, lines fourteen through sixteen; (2) page twenty, lines twenty through twenty-two; and (3) Figure 5. App. Br. 3.

10. The Specification describes that data blocks are indexed so that each data block resides in a specific point in an N-dimensional coordinate system. Spec. 15:14-16.

11. Method 500 involves traversing document links to discover cross-subject affinities. Method 500 also maps data blocks into N space using steps 505-555, where N is the number of words (e.g., keywords) or subjects in a selected corpus. The output of the method 500 is a collection of index blocks which map each of the data blocks given as an input to an N-dimensional space. Spec. 20:10-22:13; Fig. 5.

12. The Summary of Claimed Subject Matter matches the computer system recited in the preamble of claim 24 to Figure 11 of Appellant's disclosure. App. Br. 3.

13. The Specification describes the computer system's hardware usable with the invention, including a processor or central processing unit (CPU) 1111. Spec. 41:14-42:20.

PRINCIPLES OF LAW

The test for definiteness under 35 U.S.C. § 112, second paragraph is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). In the context of a means-plus-function limitation, if one skilled in the art would be able to identify the structure, material, or acts for performing the claimed function, then the requirements of 35 U.S.C. § 112, second paragraph are satisfied. *See Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1381 (Fed. Cir. 1999); *see also In re Dossel*, 115 F.3d 942, 946-47 (Fed. Cir. 1997). If there is insufficient disclosure of the structure, material, or acts for performing the claimed function, however, a rejection under 35 U.S.C. § 112, second paragraph is appropriate. *See In re*

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Donaldson, Co., 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc); *Biomedino v. Waters Tech. Corp.*, 490 F.3d 946, 952 (Fed. Cir. 2007).

The presumption that § 112, sixth paragraph does not apply is overcome when there is “no structural context for determining the characteristics of the [claim element] other than to describe its function.” *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1096 (Fed. Cir. 2008). Generic terms, like “mechanism,” “means,” “element,” and “device,” typically do not have enough definite structure to avoid means-plus-function treatment. *Id.* For example, “the unadorned term ‘mechanism’ is ‘simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term ‘means for.’’’ *Id.* (quoting *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1360 (Fed. Cir. 2004)).

In cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming, this court has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor. The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the patent claims be limited to that structure and its equivalents is to avoid pure functional claiming . . . For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming. Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to “the corresponding structure, material, or acts” that perform the function, as required by section 112 paragraph 6.

Aristocrat, 521 F.3d at 1333.

A. Claims 24, 28, 34, 50, and 51

ANALYSIS

1. 35 U.S.C. § 112, Second Paragraph

We note that neither Appellant nor the Examiner indicates whether the language in computer system claim 24 invokes 35 U.S.C. § 112, sixth paragraph. While claim 24 does not use the term “means for,” we still find that § 112, ¶ 6 has been invoked by the recitation “a construction unit for constructing . . . and traversing data block links” In *Welker Bearing*, 550 F.3d at 1096, the court found that generic terms, like “mechanism,” “means,” “element,” and “device,” typically do not have enough definite structure to avoid means-plus-function treatment. Similarly, the claimed construction “unit” does not have enough definite structure to avoid invoking 35 U.S.C. § 112, sixth paragraph and will be treated as a means-plus function limitation. *See id.*

We consult with the Appellant’s Summary of Claimed Subject Matter section in the Appeal Brief to determine whether the Specification describes structure, material, or acts corresponding to the functions recited in claim 24. *See* 37 C.F.R. § 41.37(c)(1)(v). The Summary matches page fifteen, lines fourteen through sixteen and Figure 5 of Appellant’s disclosure to the construction unit for constructing a N-dimensional coordinate space and page twenty, lines twenty through twenty-two to the construction unit for traversing the data block links. FF 9. Page fifteen, lines fourteen through sixteen of Appellant’s Specification describes a technique for indexing data blocks in an N-dimensional coordinate system without discussing any corresponding structure. *See* FF 10. Page twenty, lines twenty through

twenty-two of Appellant’s Specification also describes a method 500 involving traversing document links to discover cross-subject affinities without addressing any structure to perform this function. *See FF 11.* These portions of the Specification, however, amount to nothing more than a restatement of the functions in the claim. *See Finisar Corp. v. The DirecTV Group, Inc.,* 523 F.3d 1323, 1340 (Fed. Cir. 2008).

In fact, apart from original claims 23 and 29, the Specification does not discuss a “construction unit.” *See FF 8.* The record also provides no evidence that skilled artisans would understand the term “construction unit” has a definite structural meaning. Nonetheless, the Brief’s Summary of Claimed Subject Matter section also matches the computer system recited in the preamble of claim 24 to Figure 11. FF 12. Figure 11 describes the computer system’s hardware includes a processor or central processing unit (CPU) 1111. FF 13. Without specific detail, the Specification also states that *some* method of the invention can be performed by a computer or processing apparatus to execute a sequence of machine-readable instructions. *See FF 3.* Thus, at best, the corresponding structure for the “computer system” comprising a “construction unit” 24 for performing the functions of constructing a N-dimensional coordinate space, wherein N is a cardinality of a collection of subject words, and traversing data block links leading to discovery of cross-subject affinities involves a computer.

However, this computer, processor, or CPU is tantamount to a general-purpose computer. Simply disclosing a processor or CPU as the corresponding structure to perform the recited functions does not limit the scope of the claim to the corresponding structure, material, or acts that perform the recited functions, as required by 35 U.S.C. § 112, sixth

paragraph. *See Aristocrat*, 521 F.3d at 1333. Figure 5 demonstrates the “constructing an N-dimensional coordinate space” function of claim 24 includes an algorithm that has steps to map data blocks into an N-dimensional coordinate space. *See FF 11.* However, Figure 5 and its accompanying discussion fail to provide an adequate description *for constructing* the actual coordinate space. That is, the construction step is a separate and distinct step from the traversing step.

Moreover, the Specification does not further provide any details or an algorithm to perform the construction unit’s function of traversing data block links leading to discovery of cross-subject affinities (*see FF 9-13*) that transform the disclosed general purpose computer into a special purpose computer. That is, the Specification fails to disclose a specific algorithm that transforms the disclosed general purpose computer into a special purpose computer programmed to perform the disclosed functions of the construction unit in claim 24. *See Finisar*, 523 F.3d at 1340; *see also Rodriguez*, 92 USPQ2d at 1405-06.

Thus, the Specification does not provide adequate corresponding structure or limit the scope of the claim to corresponding structure that performs the function as required by § 112, sixth paragraph. As discussed above, there is therefore an inadequate disclosure of the structure, material, or acts corresponding to the construction unit’s functions of “constructing” and “traversing” as recited in claim 24.

Because we cannot determine the metes and bounds of claim 24 due to these defects, we find that the claim is indefinite. We additionally find claims 28, 34, 50, and 51 indefinite since they depend from claim 24.

2. 35 U.S.C. § 112, First Paragraph

Independent claim 24 is also rejected under 35 U.S.C. § 112, first paragraph. First, since there is only one recited “means” that performs two functions (i.e., a means for constructing a N-dimensional coordinate system and traversing data block links) in claim 24, this claim is a single means claim that is improper under 35 U.S.C. § 112, first paragraph. In essence, this claim covers *every conceivable means* for achieving the desired result (i.e., constructing an N-dimensional coordinate system and traversing data block links). The Specification, however, discloses only those means known to Appellant (FF 3, 8, 10, 11, and 13) and does not enable everything within the scope of the claim. *See In re Hyatt*, 708 F.2d 712, 714 (Fed. Cir. 1983); *see also Ex parte Miyazaki*, 89 USPQ2d at 1217 (discussing *Halliburton Energy Servs. v. M-ILLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008)). Consequently, we find that independent claim 24 constitutes an improper single means claims.

Alternatively, even if claim 24 could somehow be construed as not containing means-plus-function limitations, it would still be unpatentable under § 112, first paragraph, as purely functional. The “*Halliburton* case remains viable for claims having purely functional language which is *unlimited* either by (1) the application of 35 U.S.C. § 112, sixth paragraph, or (2) the additional recitation of structure.” *Miyazaki*, 89 USPQ2d at 1217. As discussed above, the Specification does not describe every way of performing the recited functions recited in claim 24. Therefore, the claim fails to satisfy 35 U.S.C. § 112, first paragraph for lack of an enabling disclosure commensurate with the scope of the claim.

For the foregoing reasons, independent claim 24 is rejected under 35 U.S.C. § 112, first paragraph. Claims 28, 34, 50, and 51 depend from claim 24. These claims do not further limit or recite an additional unit for performing a function, and therefore also lack an enabling disclosure commensurate with the scope of the claims.

B. Claim 44

ADDITIONAL FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

Appellant's Disclosure

14. The original Specification only discusses or uses the phrase “mapping unit,” “determining unit,” and “measuring unit” in the claims. *See generally* Specification.

15. Appellant’s Summary of Claimed Subject Matter in the Appeal Brief matches: (a) the unit for constructing a coordinate system to Figure 5; (b) the mapping unit for mapping documents of the database into the coordinate system to Figure 5; (c) the determining unit for determining a closeness of any two data blocks in the database in Figure 6; and (d) a measuring unit for measuring a distance function between the data blocks to Figure 6. App. Br. 3-4.

16. The Specification describes a method 600 for calculating a proximate list for a data block. The steps 625, 630, 635, 640, and 645 determine the distance between data blocks using a function. Spec. 22:14-23:11; Fig. 6.

17. The Specification states that “closeness” between two data blocks is given by the distance:

$$D(P1, P2) = \sqrt{S_D (P1_D - P2_D)^2}$$

Spec. 15:19–16:1.

ANALYSIS

1. 35 U.S.C. § 112, Second Paragraph

We note that neither Appellant nor the Examiner indicates whether the language in independent claim 44 invokes 35 U.S.C. § 112, ¶ 6. While claim 44 does not use the phrase “means for,” we still find that § 112, ¶ 6 has been invoked for the following limitations: (1) “a unit for constructing a coordinate system”; (2) “a mapping unit for mapping documents of said database”; (3) “a determining unit for determining a closeness of any two data blocks in said database”; and (4) “a measuring unit for measuring a distance function between data blocks.” That is, we find that the recited terms “unit,” “mapping unit,” “determining unit,” and “measuring unit” have no structural context for determining the characteristics of the units other than to describe their functions. *See Welker Bearing*, 550 F.3d at 1096. Therefore, the claimed “units” do not recite sufficiently definite structure to avoid means-plus function treatment. *Id.*

Appellant’s Summary of Claimed Subject Matter matches these units to Figures 5 and 6 of the disclosure. FF 15-16. These figures and their accompanying descriptions, however, describe no more than process steps or an algorithm to map documents to a coordinate system. FF 11 and 16. The Specification does not describe “a unit,” “a mapping unit,” “a determining unit,” or “a measuring unit,” let alone correlate these units to sufficient

structure. *See* FF 8, 10, 11, 13, 14, 15, 16, and 17. These portions of the Specification fail therefore to describe sufficient structure for the recited units to avoid means-plus function treatment.

Also, as explained above, the Specification fails to describe a structure to perform the function of constructing a coordinate system, other than a general purpose computer or processor. FF 3 and 13. The mapping unit for mapping documents of the database into the coordinate system uses an algorithm (FF 11) and does also not describe a structure to perform the recited function. Likewise, the determining unit for determining the closeness of two data blocks or a measuring unit for measuring a distance function between data blocks is no more than comparisons and mathematical calculations. *See* FF 16-17. These portions of the Specification amount to nothing more than a restatement of the functions in the claim. *See Finisar*, 523 F.3d at 1340.

Moreover, as explained above, the corresponding structure for the “computer system” recited in claim 44 and its corresponding units involve, at best, a computer, processor, or CPU. However, as explained above, simply disclosing a processor or CPU as the corresponding structure to perform the recited functions does not limit the scope of the claim to the corresponding structure, material, or acts that perform the function, as required by 35 U.S.C. § 112, sixth paragraph. *See Aristocrat*, 521 F.3d at 1333. As discussed previously, the structure described in the Specification that corresponds to the means-plus-function limitations (i.e., the unit for constructing a coordinate system, a mapping unit for mapping documents of the database into the coordinate system, a determining unit for determining a closeness of any two data blocks in the database, and a measuring unit for

measuring a distance function between two data blocks) is nothing more than a general-purpose computer or processor. *See FF 3 and 13.* The Specification fails therefore to disclose a specific algorithm that transforms the disclosed general purpose computer into a special purpose computer programmed to perform the disclosed functions of the units recited in claim 44. *See Finisar*, 523 F.3d at 1340; *see also Rodriguez*, 92 USPQ2d at 1405-06.

Because we cannot determine the metes and bounds of claim 44 due to these defects, we find that the claim is indefinite. Accordingly, we will not reach the merits of whether claim 44 is patent-eligible under 35 U.S.C. § 101 since we cannot determine the scope of claim 44.

2. 35 U.S.C. § 112, First Paragraph

Alternatively, even if claim 44 could somehow be construed as not containing means-plus-function limitations, it would still be unpatentable under § 112, first paragraph, as purely functional. Independent claim 44 covers *every conceivable means* for achieving the desired result (i.e., constructing a coordinate system, mapping documents of the database into the coordinate system, determining a closeness of any two data blocks in the database, and measuring a distance function between two data blocks). The Specification, however, discloses only those means known to Appellant (FF 3, 8, 10, 11, 13, 14, 16, and 17) and does not enable everything within the scope of the claim. *See Hyatt*, 708 F.2d at 714; *see also Miyazaki*, 89 USPQ2d at 1217. Consequently, independent claim 44 recites purely functional language.

For the foregoing reasons, independent claim 44 is rejected under 35 U.S.C. § 112, first paragraph as lacking an enabling disclosure commensurate with the scope of the claim.

C. Claims 25-27, 29-33, and 35-39

Claims 25-27, 29-33, and 35-39 depend from claim 24. However, each recites more than one unit and, thus, cannot be considered a single means claims. Nonetheless, while these claims depend from claim 24, we reject these claims under 35 U.S.C. § 112, first and second paragraph for the reasons discussed above in connection with claim 44. First, these claims are indefinite because the Specification does not provide an adequate structure for performing the recited functions. Second, these claims lack an enabling disclosure commensurate with the scope of the claims since the claims cover every conceivable manner for performing the recited functions while the Specification only discloses those known to Appellant.

IV. THE PRIOR ART REJECTIONS

Claims 2-10, 22, 24-32, 44, 45, and 47-51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fox and Egendorf. Ans. 5-13. Claims 11-17 and 33-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fox, Egendorf, and Egger. Ans. 13-15.

As to these prior art rejections, our decision is dispositive with respect to patentability since (1) claims 2-17, 22, 45, and 47 on appeal do not recite patent-eligible subject matter under § 101, and (2) we cannot determine the scope of claims 24-39, 44, 50, and 51. We therefore need not reach the question of whether claims 2-17, 22, 24-39, 44, 45, and 47-51 would have

been obvious under § 103. *See Diamond v. Diehr*, 450 U.S. 175, 188 (1981); *In re Comiskey*, 554 F.3d 967, 969 (Fed. Cir. 2009) (en banc) (declining to reach obviousness rejection on appeal after concluding many claims were nonstatutory under § 101); *Bilski*, 545 F.3d at 951 n.1 (noting that § 101 is a threshold requirement and that the Examiner may reject claims solely on that basis); *In re Rice*, 132 F.2d 140, 141 (CCPA 1942) (finding it unnecessary to reach rejection based on prior art after concluding claims were directed to nonstatutory subject matter). *See also In re Steele*, 305 F.2d 859, 862 (CCPA 1962) (supporting not presenting an art rejection when considerable speculation into the scope of the claim is required).

CONCLUSIONS

The Examiner has not erred in rejecting claims 2-17, 22, 45, 47-49 under § 101.

Appellant has shown the Examiner erred in rejected claim 17 as lacking enablement.

We reverse the rejection of claims 24-39, 44, 50, and 51 under 35 U.S.C. § 101 and enter new grounds of rejection for these claims under 35 U.S.C. § 112, ¶¶ 1 and 2.

ORDER

We affirm the Examiner's decision rejecting claims 2-17, 22, 45, and 47-49 under § 101. We reverse the rejections of: (1) claim 17 under § 112, 1st paragraph, and (2) claims 24-39, 44, 50, and 51 under 35 U.S.C. § 101.

We enter new grounds of rejection under 37 C.F.R. § 41.50(b) for claims 24-39, 44, 50, and 51.

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This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). This section provides that “[a] new ground of rejection... shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

- (1) Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
- (2) Request that the proceeding be reheard under § 41.52 by the Board upon the same record

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2009).

AFFIRMED-IN-PART
37 C.F.R. § 41.50(b)

nhl

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